

Error Rate Qualification Testing

James Yen

National Institute of Standards
and Technology

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Regarding the numbers listed in the example table of the Mean Time Before Failure (MTBF) probability ratio sequential test (PRST), there were concerns raised that :

(1) the numbers do not correspond to the numbers for the same table in the 1990 VSS, even though the stated assumptions do not change, and

(2) the numbers from neither the 1990 nor the 2002 tables correspond to numbers that would result from standard PRST formulas or designs listed in standard references such as the military handbook MIL-HDBK-781A.

To address these concerns, we have replaced the numbers in the table with those that would be indicated by the truncated PRST design from MIL-HDBK-781A with the corresponding parameters and made it more clear in the text that a truncated design was chosen.

<u>Number of Failures</u>	<u>Accept if Time Greater Than</u>	<u>Reject if Time Less Than</u>
0	169	Continue test
1	243	Continue test
2	317	26
3	392	100
4	466	175
5	466	249
6	466	323
7	N/A	(1)

(1) Terminate and REJECT

- Theoretical formulas lead to somewhat different numbers, but we use numbers from MIL-HDBK-781A tables as the reference.
- The given table is appropriate only for the stated parameters (Minimum Acceptable Value of 45 and Nominal Specification Value of 135); the appropriateness of the testing parameters used should be considered.
- Users should be cognizant of the assumptions involved in time-based tests that use exponential failure times and constant failure rates.